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## ON THE FORMER NESTING OF THE SPOONBILL IN MIDDLESEX.

BY THE EDITOR.

UNTIL a very few years ago ornithologists were not aware of more than one record of the former nesting of the Spoonbill (*Platalea leucorodia*) in this country. This was the instance noticed by Sir Thomas Browne, who, writing in 1668 on 'Birds found in Norfolk,' mentions the *Platea* or *Shovelard* as having formerly built in the Hernery at Claxton and Reedham, and in his day at Trimley in Suffolk.\*

In 'The Zoologist' for October, 1877 (pp. 425-429) I directed attention to the fact that a second and earlier record of the kind was to be found in a MS. Survey of certain manors in Sussex belonging to the Duke of Norfolk, taken "by commandment" of the Duke in 1570; the Spoonbills or *Shovelers* (as they are termed in this Survey) being described as breeding in that year with Herons in the woods called the Westwood and the Haselette at East Dean, near Goodwood.

I have now the pleasure of supplying some information respecting another breeding-place of the "Shoveler" hitherto overlooked by naturalists, this time in Middlesex, and so near to the metropolis as the Bishop of London's park at Fulham.

The evidence of this interesting fact is to be found in the Year Book of 14 Hen. VIII., fol. 1, wherein is contained a report

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\* Sir T. Browne's Works. Ed. Wilkin, vol. iv., pp. 313-324.



of an action for trespass brought by the Bishop of London in 1523 against a defendant to whom he had leased the park for grazing purposes, and who had taken some of the birds out of the trees, which by his lease the Bishop had expressly reserved.

The report, which is written in Norman French and printed in black letter, with numerous contractions, I have transcribed *literatim et verbatim*; but, as it is too long to be given here in its entirety, I will quote only so much of it as relates directly to the Herons and Shovelers, condensing the arguments put forward on behalf of the parties to the action:—

“*De Termino Michælis Anno xiv Regni Regis Henrici Octavi.*

“En trespas port p l'Evesque de Lond envs un N. p son clos infreint & pur prisel de *Herons* & *Shovelers*. Le deff dit q le lieu ou &c conten xx acres de terre que le dit Evesque lessa à luy p tm des ans & les *Herons* fesoient lour nids deins &c & il eux prist. Et le pl. dit q le lieu &c. est nom un Park, que le pl. lessa al' def. except le bois & subbois, & les *Herons* & *Shovelers* fesoient lour nids in les dits arbres, & il eux prist; sur que &c.”

In plain English this would read:—

“Michaelmas Term in the 14th year of the reign of King Henry VIII.

“An action of trespass brought by the Bishop of London against one N. for having broken his close, and for taking *Herons* and *Shovelers*. The defendant says that the place where &c contains twenty acres of land; that the said Bishop leased it to him for a term of years, and the *Herons* made their nests therein &c and he took them. And the plaintiff says that the place &c is called a Park, that the plaintiff leased it to the defendant, excepting the wood and underwood, and the *Herons* and *Shovelers* made their nests in the said trees and he took them. Upon which &c [judgment is prayed.]”

Briefly stated, the chief argument for the defendant was that the plaintiff was entitled to no more than was implied by the words “wood and underwood,” that being all that he had reserved by his lease, and that the birds could not be included, as they were not expressly mentioned in the lease. On behalf of the Bishop it was contended that in as much as he had expressly

reserved the trees, he was entitled to all profits arising from those trees, "as for example acorns"; and consequently to the birds which habitually nested there.

Mr. Justice Brook thought:—"Il av intest a eux p reas del arbr ou ils edifiet, & auxy il av ppété in ceux q'd ils sont e s arbr; car il dira *nidum ardearum suarum cepit*, & doqe n'est lojal à aut d'eux pnd. Come si jeo except un arbr, & un esperv' fait s nid in e, ou bees sont in l'arbr, ne list\* a asc† de eux pnd; iffint‡ icy."

In other words:—"He has an interest in them by reason of the trees in which they build, and also he has a property in them when they are in his trees: for he will say the defendant took the nest of his Herons, and it is not lawful for others to take them. As, if I except a tree, and a sparrowhawk makes its nest in it, or bees are in the tree, it is not lawful for anyone to take them; so here."

A stronger case in support of this view was put thus:—

"Car si jeo lesse un manoir res'vant mon warr, jeo aurai les conils":—

"For if I lease a manor reserving my warren, I shall have the rabbits"; liberty of egress and regress being implied. So in this case, the Bishop having reserved his trees, with implied access to them, was entitled to all profits arising from them, and could take the Herons and Shovelers, and the lessee could not legally touch them. Or, as the report runs, "l'Evesque peut ven p pnd ceux, & le lessee ne puit loialent eux pnd."

And so the Bishop obtained judgment in his favour, and the heronry with its Spoonbills, for the time being at all events, was preserved from destruction.

The story of this trial is full of interest, not only to naturalists, but to archæologists and to those learned in the law. One longs to know something more on the subject. Who was the Bishop? and who the defendant? Neither are named in the report of the case. § The name of the latter it is probably now impossible to

\* ne list = non licet.

† asc = aucun.

‡ iffint = afin.

§ It is amusing to note the way in which English words are interspersed throughout these old reports, although confessedly written in the law French of the day. The Year Book, from which this Report is extracted, is entitled:—"Les REPORTS des CASES en les ans des Roys Edward V Richard III Henrie VII & Henrie VIII Tous qui par cy devant ont esté publiés. Or

discover, unless any of the pleadings in the action have by chance been preserved. The plaintiff may without doubt be identified as Dr. Cuthbert Tunstall, created Bishop of London in 1522, appointed Keeper of the Privy Seal in 1523, and translated to the see of Durham in 1530. Some account of him will be found in Faulkner's 'Historical and Topographical Account of Fulham,' 1813 (p.199), Hutchinson's 'History of Durham' (vol. i. p. 440), and in Fox's 'Synopsis of the Newcastle Museum,' 1827 (p. 5), in a memoir of one of its founders, Marmaduke Tunstall, author of the 'Ornithologia Britannica,' and a descendant of the Bishop's brother, Sir Brian Tunstall, who was killed at Flodden in September, 1513. In the last-named work will be found a pedigree of the Tunstall family.

Dr. Tunstall, whose portrait hangs in the library at Fulham Palace, was evidently a naturalist who liked to see the birds building in his park, and no doubt was one of those who warmly supported the measure for the protection of wildfowl which became law only a few years later.

In 1534 an Act was passed by which "Shovelers," Herons, and other wildfowl were protected between the 1st March and the 30th June. This Act intituled, "an Acte to avoide destruction of Wilde-fowle" (25 Hen. VIII. cap xi) prohibited the taking of "any maner of egges of any kinde of wildfowle from or in any neste place or places where they shall chaunce to be laide by any kinde of the same wildfowle upon peine of imprisonment for one yere, and to lose and forfait for every egge of any *Crane* or *Bustarde* so taken or distroid xx pence, and for every egge of every *Bittour*, *Heronne*, or *Shovelarde* viijd, and for every egge of every *Malarde*, *Tele*, or other wildfowle one penie; the one moitie thereof to be to the King our soveraigne lorde, and the other halfe to him that will sue for the same in forme aforesaide." \*

The heronry in the Bishop's park was in all probability a very ancient one at the date of the action, Fulham itself being a place of great antiquity. In the earliest document in which

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nouvellement imprimé, corrigé, & revuë; ove plusieurs bonnes Notes en la Marge par tout le Livre, &c. Folio, London, MDCLXXIX." These Reports go back to the time of Edward I., and were printed from ancient MSS. in the possession of Sir J. Maynard, Knt., Serjeant-at-Law to Charles II. in 1678.

\* Herons were protected by 19 Hen. VII. c. 11. See Nelson's 'Game Laws' (sixth edition, pp. 168. 169).



the place is mentioned, namely, a grant of the manor to the Bishop of London and his successors A.D. 691, it is spelled *Fulánham*.\*

Norden, who himself lived at Fulham, tells us in his 'Speculum Britanniae,' 1593 (pars i. p. 20), that "the name of the place was anciently written *Fullenham* or *Fullonham*, which (as Master Camden taketh it)† signifieth *volucrum domus*, the habitacle of birdes, or the place of fowles, *Fullon* and *Fuglas* in the Saxon toong doe signifie fowles, and *ham* or *hame* as much as home in our toong. So that *Fullonham* or *Fuglas-hame* is as much to saie as the home, house, or habitacle of fowle. It may be also taken for *volucrum amnis*, or the river of fowle; for *ham* also in many places signifieth *amnis*, a river. But it is most probable it should be of lande fowle, which usually haunt groves, and clusters of trees, whereof in this place, it seemeth, hath been plentie."

This opinion of Norden (backed by the authority of Camden), although written some seventy years after the event in question, curiously enough receives strong confirmation from the fact that Herons and Shovelers, "lande fowle which usually haunt groves," were breeding on the very spot in 1523. Their existence there at this date is to be attributed partly to the direct protection afforded them by the lord of the manor, and partly to the inaccessible position of their nesting trees, which, so far as the general public were concerned, could only have been approached from the river, and then not without risk of action for trespass.

Local historians inform us that the few roads which then existed in the parish of Fulham were at times nearly impassable, two teams of horses being required to draw one cart. From entries in the parish books it appears that the highway rate at that period nearly equalled the poor rate, a proof of the wretched condition in which the roads must then have been. Indeed, it was not until about 1750 that there was much improvement in this respect.

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\* Wharton, Hist. de Episcop. Lond. 1676, p. 18. The manor of Fulham was anciently held by the Bishop of London of the Saxon Kings by the service of prayers for the soul of the donor, and in 1066, as appears by the Domesday Book, the Bishop of London held forty hides of land at *Fuleham*. The palace was built by Bishop Fitzjames in the reign of Henry VII., by whom he was created Bishop of London in 1505.

† Camden, 'Britannia,' 1586.

The amount of rent which the Bishop received under his lease in 1523 does not appear; but a few years later, namely, about 1547, two acres of meadow given by a benefactor to the poor of the parish of Fulham were valued at 13s. 4d. per acre.\* The value of land here improved but slowly; a century or more later, namely, in 1665, an entry in the churchwardens' books shows that, at a vestry meeting held on May 15th in that year, it was ordered that all arable land be rated and assessed at 20s. per acre, and all pasture land at 30s. per acre.†

It would be interesting if the visitor to Fulham Palace at the present day could identify the trees (if still existing) in which the Spoonbills formerly had their nests. To point out the precise spot, however, would now perhaps be impossible, unless any tradition on the subject still survives, which is unlikely, or unless any old map or plan of the estate has been preserved on which the site of the heronry may be marked. The ground on which it stood is described in the report of the action above quoted as "a park containing twenty acres of land."

In Lyson's account of the parish (vol. ii., p. 353), we find the following description of the Bishop's palace:—"The house, gardens, and a large grass field called the warren, containing in the whole about 37 acres, are surrounded by a moat over which are two bridges. There belong also to the demesne about 17 acres of meadow by the water side, the western part of which [separated by a creek from Craven Cottage when Faulkner wrote in 1813] being a singularly beautiful spot was much improved by Bishop Porteus, who made secure embankments towards the river and ornamented it with a shrubbery and plantations."

I incline to think that this "17 acres of meadow by the water side" represents the "park of 20 acres" which was let for grazing in 1523, for it is not likely that any land within the still existing moat, and consequently so near the palace, would be let for such a purpose.

One thing seems certain, there were formerly many more trees around the palace than are now to be found there. When Queen Elizabeth visited Bishop Aylmer there previous to his death in 1594, she "misliked nothing but that her lodgings were

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\* Lyson's 'Environs of London,' vol. ii. p. 395 (1795).

† Faulkner, 'Hist. and Topog. Acct. Fulham,' p. 150 (1813).

kept from all good prospect by the thickness of the trees," as she told her vice-chamberlain, who reported it to the Bishop.\*

As to the kind of trees in which the Herons and Spoonbills were building, it would seem, from a reference in the law report to "acorns" as profits arising from the trees reserved by the lease, that some of them at least were oaks. In 1793, amongst other fine old trees then standing, were several white oaks 8 ft. in girth and 70 ft. high, and some evergreen oaks 8 ft. in girth and 50 ft. high. But these may have been planted after Bishop Tunstall's time; perhaps by Bishop Grindall, who was a great botanist, and, according to Fuller, the first person who imported the tamarisk tree to this country about the year 1560.†

How long the Herons and Spoonbills continued to frequent the park at Fulham, and build in the trees there, we have at present no evidence to show. From the decisive steps taken by Bishop Tunstall to protect them, we may reasonably assume that they continued there at all events until his translation to the See of Durham in 1530. Whether his successor, Bishop Stokesley, took the same amount of interest in them, and continued to afford them protection, I have not discovered; a search amongst contemporary records having up to the present time failed to throw more light on the subject.

In the "Privy Purse Expenses" of Henry VIII. there is an entry relating to the Spoonbill in the year following Bishop Tunstall's departure, which reads as follows:—

"1531. Itm the x daye of Novembr paied to a svnt of my lorde Cobham's in rewarde for bringing of Shovelards to the King's Grace - - - - - iiij. viijd."

But these birds probably came from Cobham Hall, near

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\* Strype's 'Life of Aylmer,' p. 103.

† A century later, in Bishop Compton's time (1673-1713), the gardens of Fulham Palace became quite celebrated by reason of the number of exotic shrubs and trees which that prelate imported and planted there. Ray has given some account of them in his 'History of Plants,' published in 1688, and frequent allusion is made to them in Aiton's 'Hortus Kewensis.' In the 'Philosophical Transactions' (vol. 47, p. 241), Sir William Watson has described the trees which he found growing there in June, 1751. The row of limes near the Porter's Lodge, of great age, were probably, says Lyson (vol. ii. p. 352), planted by Bishop Compton about the year of the Revolution, when the fashion of planting avenues of limes was introduced from Holland.

Gravesend, now the seat of the Earl of Darnley. A heronry has existed here from time immemorial, and it is quite possible that "Shovelards" may have once nested there with the Herons, just as they did at Fulham.

It seems unnecessary at the present time to show that by the name "Shoveler" or "Shovelard" the Spoonbill (*Platalea leucorodia*) was intended, and not the Shoveler Duck (*Anas clypeata*), especially as I have already dwelt upon this point in my former article on the subject (Zool. 1877, p. 428). In addition to the illustrations there given of the former use of the name "Shoveler" to designate the Spoonbill, the following may be noted:—

Drayton, describing the fenland of Lincolnshire in 1622, with its various wildfowl, mentions the "Shoveler" amongst the notable birds to be found in the Isle of Axholme, and refers particularly ('Polyolbion,' Song xxv.) to the whizzing sound of its pinions in flight, a peculiarity which no other writer that I am aware of has noticed.

Skelton, the poet-laureate, in his poem on 'Philip Sparrow,' notices "the Shovelar with his brode beck."

The accompanying plate is, by permission, from an illustration in 'Essays on Sport and Natural History,' published by Horace Cox, 'The Field' Office.

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## BIRD-LIFE ON THE SALTEES AND THE KERAGHS, CO. WEXFORD.

BY RICHARD J. USSHER.

THE Saltees are two islands lying off the south coast of Wexford, not far from the south-east angle of Ireland. The south Saltee is the larger, and is distant about three and a half miles from the mainland at its nearest point. It extends southwards about a mile and a quarter in length. No island equally large and elevated is to be found from Lambay Island north of Dublin Bay to Cape Clear, and most of the Wexford coasts are low and sandy; accordingly the South Saltee is the chief breeding resort of sea-fowl in this part of Ireland, continued persecution having driven them more and more from the coasts.



While yet miles from the island one is struck by the hosts of *Alcidæ* dispersed through the surrounding sea. Gannets on lengthy pinions are seen, but these are chiefly immature birds, and none certainly breed on the Saltees. The rapid buoyant flight of the Manx Shearwater may be compared with that of the Guillemot darting straight along; but, though numbers may be seen on the wing late in May, repeated search, continued after nightfall, has failed to discover the Shearwater or Petrel on land here.

As we approach the island its central portion looks low. This is cultivated by a farmer who lives there. Hills of granite rise towards either end, the whole southern end of the island being a rocky elevated tract of about fifty-six acres, rising to a hundred and ninety-eight feet above the sea, and girt with cliffs. This portion the sea fowl enjoy undisturbed.

We land beneath the farmstead on the north-west side. The western shore is sloping and shingly. Here a few Ringed Plovers breed, and Whimbrels loiter on migration. Round a small lagoon in the shingle one or two pairs of Oystercatchers breed, and in an adjoining bean-field beside the sea, I saw last May an Oystercatcher sitting on three eggs among the young bean-stalks. The nest was a depression lined with little pebbles, obviously placed there by the bird. From one of the rabbit-holes near the lagoon, or in the warren beyond it, a Sheldrake usually takes flight and alights on the sea to watch the visitor.

Crossing the island we find that the deep deposit of boulder clay which slopes so gently to the west is on the eastern side of great depth, and presents to the sea an indented margin of cliffs out of which innumerable masses of stone of all sizes project. Here we begin to realize the presence of those myriad birds with which the sea, the air, the cliffs, and the very earth beneath us is alive. Rows of Puffins stand blinking at us until we are within a few yards of them. Others startle us by issuing from holes beside us. The ground above all the cliffs (that margin the island except on the north-west) is usually honeycombed with the holes of this vast Puffin colony, which is considerably more than a mile in extent. In accessible places the Puffins lay far within their holes, but in the faces of the clay cliffs their eggs can frequently be seen from without. They lay on the Saltees early in May, but eggs have been taken there on the 22nd of June.

But the Puffins are only one element of that vast display of

bird-life. In every suitable nook of the clay cliffs or cran-nies of the rock-face Razorbills ensconce themselves, and lay towards the end of May, while the open rock ledges are crowded with Guillemots. In places any one with ordinary powers of locomotion can reach the breeding-shelves of the latter. Near the "Cat Cliff" lofty eminences rise from the sea, their faces all seamed with ledges, on every one of which Guillemots sit in rows. The small end of the egg is usually towards the sea, and the Guillemot sits with its breast towards the cliff. If the bird intends to depart, it is amusing to see how carefully it turns round and gets free from the egg, but, if suddenly frightened, it often precipitates its treasure in the panic of its flight. On the 14th of May, 1883, I could see no Guillemot's egg, and but one Razorbill's, on the island, though these birds were on their breeding-ledges. Guillemots lay here during the last week in May and the first half of June, Razorbills' eggs being somewhat more numerous in May. During a storm, the sea that breaks into the chasms and eaves of the cliffs is tremendous. It is then surprising to see how the Puffins and Guillemots will precipitate themselves into the boiling surf and flap along until they dive under the next wave, apparently swamped in the raging element. But they rapidly reappear far out, where the waves soon become dotted with them.

Rock Pigeons (with white upper tail-coverts) and Jackdaws frequent caverns in the boulder-clay and rocks, but Choughs are absent from the island, which is probably too much crowded with other species: they prefer to have a quiet sea-cave to themselves. A pair of Ravens are stated by a resident on the island to have bred there until a few years ago.

But, of the many breeding species, the Kittiwakes are the most attractive. Against the steep cliff-faces, whether of clay or rock, their innumerable nests are stuck like those of Swallows wherever a slight projection affords a basis. As we walk past and overlook cliff after cliff in the indented margin of the boulder-clay, we see an endless array of Kittiwakes seated on their nests while their mates are passing to and fro. They do not think of quitting their nests, though gazed at closely, and it is hard to scare them from their eggs until the intruder descends among them. When the male (?) returns from sea and alights on the nest beside his mate, both continue screaming for some

moments, with their pretty wings uplifted and heads crossed, first on one side and then on the other, until the new comer at length delivers up his prey to his mate. At the end of May, before an egg is laid in their colony, the Kittiwakes pass their day standing or working on the incompleated foundations of their nests; but on the 8th and 9th June, 1883, I took twenty clutches, in most of which incubation had commenced. This was the case with most of the Kittiwakes' eggs I took on the Bull Rock off Dursey Head, West Cork, on the 9th June, 1884, so that Kittiwakes appear to lay during the first and second weeks in June in the South of Ireland. I have never seen more than two eggs in a nest of this species, though three have been taken in a few cases on the Saltees.

While gazing into a bay margined with the singular cliffs of clay one may see a dark form in some recess far down, which proves to be a Shag or Green Cormorant, its sable plumage contrasting with the dove-like Kittiwakes. A more attentive scrutiny reveals several other Shags nesting in deeper cavities in the clay, some of them side by side. Further south, where the rocks rise beneath the cap of clay, we find several dens in the face of the latter looking out to sea, each tenanted by a hatching Shag or family of downy young ones, miniature Cormorants, which cry out in great excitement at our approach, but when first hatched the naked little lump of black flesh with its snaky neck and blind head tumbling about is hideous in the extreme.

On exploring the rocks which at one point are heaped on one another in tumbled masses, a Shag's nest may be found between two blocks open to the sky, or in a hollow beneath a huge mass of stone that rests on points of rock. The parent birds do not fly out to sea, but sit eyeing us from a rock a stone's-throw nearer the sea. I once approached a Shag that sat on a ledge outside the entrance of her den. She evidently thought to scare me away, for she continued to croak and snap her bill at me, writhing her snaky neck until I almost touched her with the pole I held. But Shags do not always breed in dens. At the south end of the island, where the cliffs are high and surmounted by very steep hill slopes, I descended to some secluded ledges, where I found several Shag's nests quite open to the sky. I have found young Shags on the Saltees on the 11th May, but

at that date most of the nests contained fresh eggs. Eggs may be taken all through May and into June, though at the same time large young ones may be found. This irregularity of breeding time in the Cormorants is a striking contrast to the Gulls' and Guillemots' habit of mainly laying within a week or two of the rest of their colony.

I have never seen more than three eggs or young ones in a Shag's nest on the Saltees, though I have taken four elsewhere.

The Common Cormorant can hardly find a part of the cliffs too much exposed to place its large nest. Of the three colonies of this species on the island, one range of nests is on the high cliff ledges at the extreme south end.

In May last, the Cormorants being driven off by our approach, we saw eggs in these nests. We then went away for a little while, and, on returning, found the eggs had all been taken, evidently by the larger gulls, who were breeding in hundreds close by; for my friend Mr. White saw a Herring Gull seize and carry off a Razorbill's egg, break it open, and eat it, and on going to the spot he picked up the shells of three eggs all broken or slit lengthwise.

But by far the largest colony of Common Cormorants is on the Makestone Rock, a huge isolated pyramid divided from the east side of the Saltee by a narrow strait. It rises some eighty or a hundred feet from the sea, and its top is black with crowded birds, among which the forms of Cormorants rise conspicuous.

I once swam the strait with a fishing-basket on my back and climbed the rock. The summit, of some extent, was covered with a living throng. On every prominence was a Cormorant's nest (no Shags breeding here), the hollow spaces between the nests being filled with Guillemots hatching, their snaky necks turning in every direction. The birds at first gazed at me, and were slow to take wing, but when they did so the storm and dust raised by their innumerable wings obliged me to crouch and close my eyes. I then found that there were young Cormorants of every size (it was the 9th June), from birds nearly full grown but still in down, to others just hatched. Round the edges of the platform the nests contained eggs in various stages of incubation, while the larger young ones towards the centre showed that the more favourable sites had been occupied first. There were deposits of guano between the knobs of rock of considerable age and



thickness, forming floors. On these lay innumerable eggs of Guillemots. Looking down the seaward side of the Makestone, the hosts of Guillemots exceeded anything of the sort I had seen. Wherever an egg could be stuck, a Guillemot had laid, often in very sloping places.

One evening I flushed a flock of Cormorants which were perched on a rocky hill opposite the Makestone. One remained asleep with its head under its wing until I caught it, when it inflicted a bite never to be forgotten, inserting its sharp hooked beak deep into my hand.

Forty Cormorants' eggs have been taken off the Makestone on the 15th June. I have taken them in the Co. Waterford from the 18th April onwards, but Cormorants chiefly lay about the beginning of May. Four is the usual number, though I have taken three and five eggs occasionally.

Throughout the elevated tract that forms the southern part of the island the surface is continually broken by groups and masses of rock, rising into craggy eminences towards the south end. As we approach this hilly region from the cultivated land, no golden furze meets the eye,—it is nearly absent from the island, but the landward hill-slopes are covered with wild hyacinths, presenting vast sheets of the loveliest blue. Here Lapwings breed, and their young ones have been seen on the 14th May. Among the beds of hyacinths loose rocks lie confused. From these we flushed a pair of Nightjars on the 14th May last, and found one of them about the spot for two days afterwards, not at all disposed to remain on the wing even at dusk. When one of these Nightjars was seen seated on a fragment of rock with nearly closed eyes, it was hard to convince ourselves that it was not a lump of moss. The boys of the island did not seem to know it. These birds were probably reposing after their migration on this sheltered side of the hill, the Saltees being within that portion of the Irish coast line where migratory birds are known to arrive in greater numbers than elsewhere. Nightjars breed commonly throughout the Co. Waterford in suitable localities, even near the sea.

On mounting the hill, the top is found to be a sheep walk covered with short grass and occasional sheets of bracken, while masses of granite project sometimes but little above the surface, forming in places groups of large stones, as though placed

there by the Cromlech builders. There we find ourselves invading the domain of Oystercatchers. The males, perched each on some little elevation, fly towards and over us with their shrill ventriloquial cry that seems to come from the ground beneath. The females slip quietly off their eggs, run a little way, and then join the males on the wing. We found three young in down on the 27th May, which ran a bit, separated, and crouched among the rocky ground where you would never discern them unless you had seen them squat. In this unusual breeding-place the Oystercatcher's eggs are often laid in a little hollow in the sod between some knobs of rock (which keep the feet of cattle off), and where some sheltering bracken is scattered. A few dead stems of the latter line the cavity, but in one instance this was lined with dry rabbit's dung, on which the eggs were laid. We found four nests besides the young on the hill-top last May, and three others on lower parts of the island. The eggs were two or three in number, in one instance a single egg, which, like the majority of the others, was much incubated. I only once saw a clutch of four taken on the Saltees. Oystercatchers seem to breed on all unfrequented parts of the island that are not too precipitous.

We now come to the great gullery which extends round the southern part and forms the most striking feature of this sea-bird's land. As you look down the hill-slopes towards the sea, you see them, especially in the rocky parts, spotted with Herring Gulls and Lesser Blackbacks, which, on observing your approach, first rise from their eggs, stand in front of their nests, and then take wing with loud outcries, forming a wheeling crowd overhead.

While walking over the uneven slopes, one's feet are constantly in danger of crushing some Gull's nest, which is often placed merely among the bosses of thrift, or in some little nook backed by points of rock, and is usually composed of tufts of withered thrift and other materials from the peaty soil.

The hundreds of these nests that one meets with round the hill-slopes, and even on the flat top, excite astonishment, and as we walk among them we are struck with the great difference made by security in the habits of these birds which lay thus on the open hills.

I know of no such colony of the larger Gulls in the South of Ireland, nor of any other breeding place of the Lesser Black-

backs along our coasts. In the Co. Waterford this species seldom occurs at the breeding time, except in the Waterford river, where numbers may be seen on the wing about thirty miles from the Saltees while their mates or relations are hatching there. The Herring Gull, however, breeds numerously along the Co. Waterford cliffs, and is the only species of Gull that does so. On the South Saltee the nests of both species are intermixed, but large colonies of each species may be seen separately in places; one little valley or hollow with its flanking ridges being tenanted by Lesser Blackbacks almost exclusively.

On the 14th May both species were laying or commencing to hatch. During my visit from the 26th to the 29th May last these Gulls were almost all hatching, and I saw but one clutch of young ones out, the season being a late one, while on the 21st and 22nd June, 1883, almost all the Gulls of these two species had young ones.

During a cold storm last May the Gulls were exceedingly slow to leave their eggs, and returned to them while I was still near.

On the same visit my friends Mr. Barrington and Mr. White found three nests of the Greater Black-backed Gulls; two of them, containing three eggs, each were near the summits of rocky brows at the south end of the island; and the third, which held but two eggs, was far out on a lower promontory near the great colony of Lesser Blackbacks, but apart from any nest of theirs. There were pellets of young rabbits' fur and bones near all the three nests, and the eggs they contained were about half incubated on the 26th and 27th May. The Greater Blackbacks were very wary, quitting their eggs as soon as they saw a human form moving.

It is stated in the fourth edition of Yarrell that I believe the Common Gull breeds on the Saltees. I am sorry to have to renounce this belief. On the 14th May, 1883, when we visited the Saltees, one of my companions gave me three Gulls' eggs, found "on the hill where the Gulls breed." They measure respectively  $2.63 \times 1.63$ ,  $2.46 \times 1.7$ ,  $2.36 \times 1.63$  inches. I sent them to Mr. Howard Saunders, who kindly inspected them and wrote thus:—

"As certainly as any Gull's eggs can be named without proof,

the two sent are those of *L. canus*: quite the character. They might be small eggs of the Lesser Blackback."

I must adopt the latter suggestion, for, after four times visiting the Saltees in May and June, and receiving reports of other visits from observant friends, I have looked out for the *L. canus* or its eggs on such occasions, and enquired for it in vain. It seems only to visit this part of Ireland in autumn and winter, especially when stormy weather sets in.

But we now come to the noblest bird of the Saltees. At a point where the cliffs are highest and thickly tenanted with bird-life the Peregrine Falcon, sallies forth from her eyrie with rapidly repeated clamouring cry echoed from the rocky heights.

She takes her steady course through the air above us, her dark pointed wings quickly vibrating, and the black cheek patch giving her face a weird appearance. On scrutinising the cliff whence we started her, a little cavern may be seen in its earthy and stony face, immediately over which a Razorbill is hatching in its nook, while others sit around in close proximity. This little cavern contains three white things which, with a glass, are seen to be young Peregrines in down, who presently make themselves heard, on which their parent flies close above us with intense cries.

I describe the scene that was before me on the 26th May. We found feathers of Corn Crake and fur of rabbits at the Peregrine's plucking place over the eyrie, and on a former occasion the bleached leg of a hedgehog.

Young Peregrines are usually hatched in the Co. Waterford early in May, but on the 25th April last I found, in a long-frequented eyrie on the coast, two young newly hatched, an egg just chipping, and an addled egg. In the high mountains the eggs are not laid until the end of April.

I have not landed on the north Saltee Island. Its surface is chiefly pastured and tilled in places, and it contains no such cliffs as those of the South Island. Not being so suited for them, sea fowl do not appear to make it their breeding resort in any large numbers.

*Birds observed on the South Saltee.*—The species marked † are believed to breed on the island. Of those marked \* the



eggs or young have been obtained there. \*Peregrine Falcon, Spotted Flycatcher, \*Hedge Sparrow, Stonechat, †Wheatear, \*Wren, Pied Wagtail, †Rock Pipit, †Meadow Pipit, \*Sky Lark, Common Bunting, Linnet, †Jackdaw, \*Swallow, Swift, Nightjar, †Rock Dove, \*Oystercatcher, \*Ringed Plover, \*Green Plover, Whimbrel, Corn Crake, †Sheldrake, \*Cormorant, \*Shag, \*Guillemot, \*Razorbill, \*Puffin, \*Kittiwake, \*Lesser Black-backed Gull, \*Herring Gull, \*Great Black-backed Gull.

*The Keragh or Keroe Islands.*—Two small uninhabited islands in Barmow Bay, about one mile from the mainland of the Co. Wexford and seven miles from the Saltees. Owing to submerged reefs landing is dangerous. Within their rocky margin their surface is covered with luxuriant grass and herbage. As one nears the western Keragh in June a clamorous colony of Terns may be seen about its highest part, which all take wing when one lands, and remains at such a height that one cannot settle the question whether they are of the Common or Arctic species. My own impression, when I visited the Keraghs on the 7th June, 1883, as well as that of others on a different occasion, was that both species were seen. I found many of their eggs, sometimes on the bare rock or shingle, and sometimes among the grass where it was not growing rank. There I saw numbers of depressions as if Terns were preparing to lay. In most cases I found single eggs, but in many there were two, and in only one case three eggs. They were all fresh. Twenty-five of them vary in length from 1·67 to 1·48 inch, and in breadth from 1·23 to 1·09 inch, the average measurements being 1·6 × 1·15 inch. While some, from their larger size and pale colour, may be eggs of the Common Tern, many others being smaller, dark, and boldly marked, must belong to the Arctic Tern. Mr. Sturge found but one Tern's egg on the Keragh on the 30th May, 1883, but on the 21st June Messrs. Baker, Salter, and Neale took many, of which the greater part were slightly incubated. This fixes the second week in June as the time the Keragh Terns laid most eggs. Mr. Baker remarked, "As far as I observed, no clutch on the shingle contained more than two eggs, while on the grass I got several clutches of four besides the usual three." Probably the nests containing four eggs were used by two females. A few Terns lay on the shingly beach

on the north side of the eastern Keragh, but, owing to the rabbits which abound through its grassy portion, it is otherwise forsaken by Terns in favour of the western island, where there are no rabbits. The River Suir below Waterford seems to be a favourite feeding resort of the Keragh Terns. We saw large numbers of them on the wing there in the end of May. No Sandwich Terns appear to breed on any island I have visited, but I saw a Lesser Tern on the 9th June on the lonely head of Ballyteigue Bay, where, along the miles of shingle, this species may find suitable breeding-places. On the 7th June, 1883, I saw a flock of seven Turnstones on the Keraghs, and on the 20th August following I saw several on the coast of Waterford. I have no reason, however, to suppose that this species breeds with us. Rock Pipits, Oystercatchers, and Ringed Plovers breed on the Keraghs, and a Corn Crake's nest has been found there. Sheldrakes have been repeatedly seen flying out of the rabbit warren on the eastern island, where they probably breed and a large flock of Wild Duck (*A. boschas*) took wing from the sheltered side of the east island on our approach. Both these species of Duck are reported to breed among the intermediate sand-hills and lagoons of the south coast of Wexford.

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#### NOTES ON THE SEAL AND WHALE FISHERY, 1885.

By THOMAS SOUTHWELL, F.Z.S.

THE general depression which seems to have settled so heavily upon all branches of industry has certainly made no exception in favour of the Seal and Whale Fishery, for, although in some cases the catches have been slightly in excess of those of the season of 1884, the price of produce has so seriously declined that the results will be very unprofitable to those who have embarked their capital in the costly vessels and outfits necessary for this speculative trade.

The Newfoundland Sealing, owing to the prevalence of easterly gales blocking the ice and preventing the vessels from getting amongst the Seals, has been very unequal. Twenty-one British vessels left St. John's Harbour, some of which were jammed in the heavy ice, and two were frozen up all the spring; those,

however, which did succeed in getting amongst the Seals made very large catches, the 'Resolute' of Dundee heading the list with 39,482, followed by the 'Ranger,' 36,925, the 'Falcon,' 25,312, the 'Iceland,' 24,500, the 'Terra Nova,' 21,741, the 'Aurora,' 12,345, and three others, each with above 10,000 seals, but the remainder did very badly; two were clean, and the remaining ten averaged only 1746 Seals each. The total catch of the nineteen successful vessels was 211,587 (against 192,175 last season), 71,272 of which fell to the share of the eight Dundee vessels which formed part of the fleet, only three of which, however, had paying cargoes, the remaining five taking 973 seals between them. If I am correctly informed that the expenses of one of the large Newfoundland steam sealers, which are from 300 to 500 tons register, amount to about £7,000, not more than five or six of the St. John's fleet would make any return, notwithstanding the increased capture of Seals.

The passage out to the Greenland Sealing was one uninterrupted succession of gales, for the most part from the westward (*cf. antea*, p. 51, 52), and it was not until the 7th of April that the 'Eclipse' succeeded in reaching the sealing ground, and then too late to secure a share of the 'Whitecoats.' About twenty vessels were present, and some 30,000 Seals killed, about 20 per cent. of which were probably old ones; the Scotch vessels secured 13,300, and the Norwegians about 29,900. Last season the young Sealing was estimated to have yielded 75,000, it is evident, therefore, that the pack must either have been much less numerous than on that occasion, or that a larger number of the young brood escaped. The latter supposition is rendered probable from the unusual number of young Seals met with in the subsequent old Seal-shooting, which proved virtually a blank, the Hooded Seal-shooting later on not being much better.

It is probable that one or more of the larger vessels next season will not incur the additional expense of leaving port so early as heretofore, but will confine themselves, at least for a season, entirely to the Whale fishery. The total catch of Greenland Seals, old and young, for the eighteen Scotch vessels was 26,448, giving an average of only 1469 each; the 'Hope' headed the list with 6567, followed by the 'Earl of Mar and Kellie,' 4100; 'Erick,' 2885; and 'Polar Star,' 1395. The remaining vessels

had under 1000 each, and the 'Intrepid,' with 4500 Seals, was wrecked, her crew being brought home by two Norwegian vessels. To this number must be added the produce of 5852 seals, the bulk of which was brought home from a station in Cumberland Gulf by the 'Germania,' raising the total northern fishery to 32,302.

The value of the 103,574 skins brought home this season from Newfoundland and Greenland at 6s. per skin would represent a sum of £31,072, to which must be added the probable produce of 1317 tons of oil at £20 per ton, or £26,340, making a total of £57,412, against a similar estimate in 1884 of £50,553. The 1885 total is helped up by the very heavy catches of some of the Newfoundland vessels, but the money estimate, owing to the depressed state of trade and the uncertain value of produce, is approximate only.

Captain Gray is still of opinion that the season opens too early, and is endeavouring to obtain an extension of the close time until the 10th of April; opinion amongst the sealers seems not to be unanimous with regard to the desirability of such an extension, but there can be no doubt the Greenland sealing is rapidly becoming unremunerative, whilst the produce is all but unsaleable; added to which the seasons of late have seemed to fight against the sealers, so that even the splendidly constructed vessels which leave the ports of Dundee and Peterhead can barely live through the weather they have experienced. It seems evident that, at least in the case of the Greenland Seals, the time is rapidly approaching when it will not pay to incur the serious outlay and risk necessary in pursuing them, and to this cause it will probably be due if the Seals escape total destruction. It is by no means certain, however, that even the withdrawal of the Scotch vessels would have any beneficial effect, for the field would then be left clear to the Norwegians, with whom the Scotch cannot compete in consequence of the less expensive manner in which the former are enabled to work their vessels; they would then probably congregate in greater numbers than at present, and, as smaller cargoes would pay, then the work of extermination would still be continued. Looking at the matter from all points of view it seems to the writer that an extension of the close time, say to the 10th of April, even if attended with a present loss, is the only way of rescuing this



important industry from extinction. The Seals would be larger, and, perhaps, not in such fine condition as on the 5th, but the advantage would make itself apparent in the increased numbers which would in a few years be found on the ice at the breeding-season. Surely, seeing the hopeless condition to which the sealing is being reduced, the experiment is at least worth trying, if only for a few seasons.

Turning to the Right Whale fishery, the deficiency is even still more conspicuous, as compared with the season of 1884. The Davis Straits vessels return 27 Right Whales (to which must be added the oil and bone of two whales brought home by the 'Germania' from a Cumberland Gulf station), against 79, and the Greenland ships 12 as against 11 fish in the previous year; the whole resulting in 510 tons of oil and 418 cwt. of bone compared with 912 tons of the former and 932 cwt. of the latter in 1884. And this falling off in produce is also attended by a serious reduction in price, whale-oil being difficult to dispose of at £20 per ton, and whalebone, which in 1884 sold for £2250 per ton, having this season been sold for £1100! The probable value of the produce would thus be £31,800 against £88,570 in the season of 1884.

The Bottle-nose fishery, too, in consequence of the number of small Norwegian vessels which have been attracted by the profits of past seasons, has fallen off from 317 fish and 312 tons of oil to 84 fish and 51 tons of oil this year, and even this reduced quantity, owing to the forced sales of the small owners engaged in the fishery, is probably not worth more than £28 per ton, whereas three years ago it readily sold for £60. Large stocks of this oil are also, I believe, held by the more wealthy owners.

Amongst the small game brought home by the Davis Straits vessels were about 200 White Whales, 220 Narwhals, and the usual number of White Bears; also about 190 Walrus, which were killed by the Davis Straits vessels. The Greenland vessels rarely meet with the Walrus, as it is pretty well exterminated at Spitzbergen by the Norwegians; an occasional solitary individual, however, which has become carnivorous and wandered far from his native shore in search of Seals, is sometimes met with far out at sea (*antea*, p. 54). At Franz Josef Land, according to Mr. Leigh Smith, they are very numerous, and I am also informed that in Frobisher's Straits they are still plentiful;

moreover, on both shores of Davis Straits, owing to the whalers being in too great a hurry to reach the north water to stop to hunt them systematically, they are still abundant.

I am informed that the Behrings Straits fishery has yielded about 200 Whales against 190 in the previous season.

My notes this year are, I fear, very commercial in their tendency, but some of the incidents of the voyage of the 'Eclipse' which Mr. Robert Gray has been good enough to allow me to extract from his private log, will be found printed in this Journal for February last (pp. 50--54). As on former occasions, I have again to express my indebtedness to Capt. David Gray for information with regard to the Greenland fishery; to Mr. D. D. Adamson, of Greenock, for particulars of the Newfoundland Sealing; and to Mr. David Bruce, of Dundee, for general statistics of the season's voyage.

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## NOTES AND QUERIES.

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**The Philosophy of Natural History.**—Lord Rosebery has endowed a new Lectureship in the University of Edinburgh. The course, which will extend over five years, will consist of thirty lectures on the Philosophy of Natural History. The lectureship has been offered to, and accepted by, Mr. G. J. Romanes, F.R.S. This is the second lectureship which has recently been founded in connection with the Chair of Natural History. The other one is on Comparative Embryology, and is occupied by Mr. G. Brook, F.L.S. *Apropos* of this subject, we have often wondered why Dr. Fleming's 'Philosophy of Zoology' (2 vols. 8vo, Edinburgh, 1822) is not more read and better known than it appears to be. It is an admirable work for the date at which it was written, and on many points may be still consulted with advantage. The same author's 'History of British Animals,' published in 1828, seems to be much better known.

**The Zoology of Central Asia.**—In 'The Zoologist' for June, 1885 (p. 227), we published some information respecting the travels of Colonel Prjevalsky, and his investigation of the Fauna of Central Asia. The last number of the Journal of the Russian Geographical Society (xxi. 3) contains a letter from him, dated Lob-nor, 29th January, 1885. From this it appears that after having spent a month at Tsaidam, the expedition, on the 18th September, resumed its further advance, following the hills of the Kuen-lun, that is, of the border range of the plateau of Thibet. Southern

Tsaidam is an immense flat land, formerly the bottom of a lake, covered with brushwood at the foot of the mountains, and with salt clay elsewhere. A narrow salt lake, Dobasun-nor, extending west to east, receives the rivers Bayan-gol, Naidmin-gol, and Umu-muren. Pheasants are numerous in the brush and the small marshes covered with rush. Other birds, even migratory, are scarce, as also mammals, which avoid a ground impregnated with salt. Only Bears coming from Thibet are numerous when the fruits of the *khormyk*-brush are ripe. Further north and north-west, as far as the Altyn-tagh Mountains, extends an immense dry desert, the soil of which consists of clay, sand, and gravel. Several of its parts man never visits, and only wild Camels wander on its barren surface. Col. Prjevalsky met with only two places having plenty of fresh water and grazing grounds,—at Hansy and at Has, where a lake of the same name has a circumference of nearly thirty miles. Leaving at Has some provisions under the guard of seven Cossacks, the remainder of the party went west to explore the valley nearly 150 miles long between the Altyn-tagh, in the north, and the Kuen-lun, in the south: the valley slowly rises from 9000 ft. at Has to 14,000 ft. at the junction of both chains of mountains. An easy passage across the Altyn-tagh leads them to Cherchen, and must have been utilised formerly on the route from Khotan to China, while another route led, *via* Lob-nor, to the Sa-cheu oasis. The excursions of the party around Has took fifty-four days, during which a region absolutely unknown before was explored. It has a very poor flora and fauna; of mammals only a hundred Antelopes were shot, and a new species of *Ovis* has been discovered. Col. Prjevalsky gave it the name of *Ovis dalailamæ*. The climate of the region is very severe. In December the temperature was seen to fall during the night below 40° Cels. Day and night strong westerly winds were blowing, often taking the force of a gale, which filled the atmosphere with sand and dust. Returning in January to the station of Has, Col. Prjevalsky resumed his journey to Lob-nor, 170 miles distant, where he was well received by his former acquaintances. There he proposed to stay throughout February to study the migrations of birds.

#### MAMMALIA.

**Wolves in France.**—Notwithstanding the active pursuit and the high premiums paid, the efforts to extirpate Wolves in France have not yet been successful. Wolves are still numerous in the forests with dense undergrowth, especially those of the Ardennes and Vosges. The latest statistics published by the French Ministry of Agriculture prove this. According to this source there were paid, in 1883, in premiums 103,720 fr. for the slaying of 1308 Wolves (9 full-grown male and 32 female, 774 half-grown, and 493 young Wolves). The premium paid for a full-grown Wolf is 200 fr.; for a she Wolf, 150 fr.; for an animal not yet fully grown, 100 fr.;

for a young Wolf, 40 fr. Only thirty-one departments are enumerated in which no Wolf was killed, whilst the number in the remaining departments varies between 1 and 131. Wolves were killed in the following departments:—Dordogne, 131; Meuse, 122; Haute-Vienne, 107; Haute-Marne, 89; Meurthe-et-Moselle, 81; Vosges, 71; Charente, 66; Corrèze, 58; Haute-Saône, 55; Côte-d'Or, 54; between 10 and 50 in the departments of Aube, Creuse, Vienne, Morbihan, Indre, Finistère, Charente-Inférieure, Cher, Côtes-du-Nord, Ardennes, Cantal, Marne, Mayenne, Puy-de-Dôme, Saône-et-Loire, Sèvres (Deux), and Var, whilst in twenty-eight departments the number of wolves killed during the year was below 10.

**Wild Animals in Algeria.**—In the eleven years from 1873 to 1884 the number of Lions killed in Algeria was 202, for which a premium of £400 has been paid by the Government. The number of Panthers destroyed in the same period was 1214, and the money paid by the Government £720. About £400 has been paid for 1882 Hyænas, and £1600 for 27,000 Jackals. The large *Felidæ* are almost extirpated, principally in the western provinces, and the Lion of the Desert is fast becoming a myth.

**White Chamois, White Otter, and White Fox in Germany.**—We learn from 'Nature' that in Germany an unusual number of white varieties of animals have been noticed this winter. "A white Chamois was shot in the Totengebirge, a white Otter was caught near Luxemburg, white Partridges were shot near Brunswick, and a white Fox was killed in Hessen." It is to be regretted that no further details have been forwarded, since, with the exception of the Partridge, white varieties of these animals are by no means common. Von Tschudi, in his important work on the Alps, mentions a white Chamois which was killed in 1853, in the Grissons, between Bonaduz and Versam, and particulars of three others will be found in 'The Zoologist,' 1878, p. 337. There is a white Otter in the Belfast Museum, which was shot at Islay in April, 1850; while, in the present number, Mr. Cecil Smith reports the recent capture of a white Fox in Somersetshire.

**A White Fox in Somersetshire.**—A white Fox seems to be a sufficiently rare occurrence in this county to be worth a note in 'The Zoologist.' On Tuesday, February 2nd, the Taunton Vale Hounds met at Cotheleston, and in the course of the day we found and ran a white Fox. He was, as may be supposed, a most conspicuous object before the hounds, especially at one time, when they were running on the opposite side of one of the Quantock combs to which most of the field were, and we could see him going along about two fields ahead of the hounds, when another Fox would hardly have been noticed. Eventually he was run to earth, dug out, and killed. The next day I had an opportunity of examining him. He was a dog Fox, about ordinary size, nearly all white, the only fox-colour being the back part of the ears, a patch on the top of the back just behind the



shoulders, and a long streak on the upper part of the brush. The eyes were the normal colour, so he could hardly be called an albino, nor could he have changed to winter pelage, as Stoats frequently do, for we had heard of him from the keeper at Cothelston, who had seen him from time to time all the season, even before the cub hunting commenced in August, though none of us had met with him.—CECIL SMITH (Bishops Lydeard).

**Pine Marten in Scotland.**—At a recent meeting of the Clydesdale Naturalists' Society, Mr. James Lumsden exhibited a specimen of the Pine Marten, *Martes abietum*, which was killed by the head forester, Mr. James M'Donald, in the Black Mount Forest on the 30th November last. This animal is said to be now of rare occurrence in Scotland.

**Risso's Grampus in the English Channel.**—I have to record the occurrence of another and a rare cetacean in the Channel, Risso's Grampus, *Grampus griseus*, which was captured in a herring-net, on February 3rd, about eight miles south of the Eddystone Lighthouse. It proved to be a female, and a beautiful specimen, showing, on its dark grey skin, the eccentric marble-like markings which are peculiar to the species. Its head was much rounded, and, as I thought, had a great resemblance to that of a Seal. Extreme length of body nine feet; greatest girth five feet two inches; dorsal fin high, and flippers rather long and pointed. Three teeth only in front on either side of the lower jaw, and none on the upper jaw. The fishermen said that when first caught, and also when dying, it made a noise like groaning. This is the second example that has been taken off Plymouth; the first, procured in 1870, is now in the British Museum. The skeleton of the recent specimen is being prepared for the Plymouth Institution, and its skin has been presented to the Albert Memorial Museum, Exeter.—JOHN GATCOMBE (Durnford Street, Stonehouse).

**Dead Whales in the English Channel.**—During the month of November last, two large Rorquals, *Balanoptera musculus*, male and female, each over sixty feet in length, were found floating dead in the Channel within three weeks of each other, one off the Start and another near the Eddystone. The first was taken into Brixham, where it remained several days, and was afterwards purchased and towed by steamer into Plymouth; but the second, a magnificent animal, was brought by two trawlers into Plymouth directly after it was found, and was (with the exception of its belly being greatly inflated with air or gas) in a most perfect state of preservation both in colour and form. I am sorry to add that, although these were the only large whales which had been brought into the port for more than fifty years, they excited but little interest. Only twelve months since I travelled from Plymouth to a place called Littleton Pill, fifteen miles beyond Bristol, for the express purpose of seeing a large Rorqual

which had been stranded on the banks of the Severn, and most gratified was I with the sight. I fear the purchasers of the two Plymouth whales must have experienced great pecuniary loss.—JOHN GATCOMBE (Durnford Street, Stonehouse, Plymouth).

#### BIRDS.

**Observations on the Migration of Birds.**—We have received the following appeal from Mr. Cordeaux on behalf of a Committee appointed by the British Association, and heartily commend it to the notice of our readers. Mr. Cordeaux says:—"You are doubtless aware that in 1880 a Committee was appointed by the British Association, for the purpose of collecting observations on the Migration of Birds at Lighthouses and Lightships, and that this Committee has since been annually re-appointed by the same Association, which in 1882 granted £15, in 1883 and 1884 £20, and in 1885 £30, in aid of the expenses incidental to the enquiry. Six reports have already been issued by the Committee, and a seventh is now in course of preparation. About 200 stations on the coasts of Great Britain and Ireland and the outlying islands, as well as several foreign stations, are annually supplied with letters of instruction and printed schedules for registering the occurrence of birds. The work of distributing these circulars, the constant correspondence with the observers, the tabulation and recording of each separate entry, and subsequent writing of the report, entail a great amount of labour, and from the increasing interest taken in the enquiry, as indicated by the number of well-filled schedules sent in, there is every prospect of the work being much heavier in the future. It is highly desirable that the observers should be supplied with some means of forwarding the wings and feet of any birds killed against the lanterns of the lighthouses and lightships, as well as small specimens entire. Unless this is systematically done, no really accurate results of the species on migration can be arrived at. Unfortunately, the funds at the disposal of the Committee are totally inadequate to meet the annually increasing and heavy demands made upon it, and in the last year the expenditure amounted to £74 13s. 10d.; the receipts, including the grant made by the British Association, to £36 10s., leaving a balance of £38 3s. 10d. to be made good by the members of the Committee. On these grounds, therefore, Donations or Annual Subscriptions are earnestly invited from those taking an interest in the subject.—JOHN CORDEAUX (Secretary to the Committee, Great Cotes, Ulceby, Lincolnshire)."

**The Destruction of Rare Birds.**—The Editor's remarks (p. 74) induce me to say a word or two upon the destruction of rare British birds. In every volume of 'The Zoologist,' and of other natural-history journals, numerous instances are recorded of the destruction of European and other birds which periodically visit this country. Several of these, as the Golden

Oriole, Hoopoe, Bec-eater, &c., are common in many parts of the Continent, and therefore specimens, if desired, are readily procurable. Almost every year these and other birds visit the British Islands, and in some instances doubtless would stay and breed if they were only protected. Instead of this, as soon as one is noticed it is immediately shot at, and either killed or frightened away. Many persons styling themselves "naturalists," I fear, are to a great extent answerable for this, by offering high prices for British-killed specimens, even sometimes shooting them themselves during the close time, in defiance of the law. Would it not be more becoming on the part of British ornithologists to discourage the killing of these feathered visitors, and to encourage them to stay and breed in these islands, procuring their "specimens," if wanted, from abroad?—S. L. MOSLEY (Science Department, South Kensington Museum).

**Movements of Grouse in Hard Weather.**—For some weeks in January this neighbourhood was covered to a considerable depth with snow, which, owing to sudden changes from thaw to frost with frequent fresh falls of snow, became a very solid mass. There was considerably more than a foot in depth above the heather on the moors, and large drifts formed on a very extensive scale. The Grouse suffered severely, being quite unable to penetrate the frozen mass for food, and in consequence they left the moors for the lower cultivated land to an extent never previously observed. The nearest point of moor to Masham is three miles distant, but the open moors are considerably further away. Walking near this ground great packs of Grouse would sweep overhead, and pass right down the valley over the town. A field of turnips was swarming with the starving birds, which vainly attempted, with numerous Partridges, to scratch down for food. The Grouse were perched on the fences, feeding on the berries like so many Fieldfares, and on several occasions they alighted amongst the branches of trees. They were feeding in the hedgerows about Burton House, and close to the outskirts of the town, and even on the heaps of manure close to buildings where persons were working all day. As far as one could see they had abandoned the moors, and were feeding miles away in the cultivated districts on anything they could get in the way of food. A large farmer whose land lies three miles still further away from their usual haunts states that immense flocks of Grouse were feeding in his turnip fields. Gangs of men were being employed to clear away the snow from patches of heather, but their efforts did very little towards providing feeding-ground for the vast numbers of starving birds.—THOMAS CARTER (Burton House, Masham).

[We learn from another source that about the time above mentioned there was an extraordinary exodus of Grouse from the moors in the neighbourhood of Ilkley, in consequence of the very inclement weather. The birds in many places left the moorland altogether, and large packs were seen in the fields about Arthington and Weeton, and even as low as

Harewood Park. A considerable number of Grouse were picked up by the men working on the North-Eastern Railway at the viaduct at Arthington, having been injured by contact with the telegraph-wires. The birds seemed quite bewildered, and it was thought vast numbers would never find their way back to the moors. Hares and Rabbits also, it was said, were dying in great numbers, and Partridges in some places were being fed with corn, in order to keep them alive while the country was covered with deep snow. During a severe winter some years ago we remember to have heard that in Caithness the Grouse were all down *on the sea-shore*, and hardly a bird was to be found on the moors.—ED.]

**Effects of Heavy Snow upon Grouse.**—The late severe storm has worked sad havoc amongst the Grouse on the Weardale Moors. Large numbers of birds were driven down into the lowlands in search of food, and many were observed in the immediate vicinity of this town and the surrounding villages. On Feb. 7th a friend, who had been in the country some eight or nine miles to the westward, said he had seen hundreds of Grouse in the fields by the roadside all the way as he drove home in a blinding snowstorm. It is to be feared that the majority of these will never find their way back to the moors; for, being thoroughly starved and bewildered, they would fall an easy prey to their enemies, both biped and quadruped. On the Consett branch of the North Eastern Railway a great many birds have been killed by flying against the telegraph-wires, and not even within the memory of the proverbial "oldest inhabitant" in the Wear Valley has there been such an influx of Grouse into the low-lying country. The following extract from the 'Newcastle Chronicle' will give some idea of the ravages of the storm in the adjoining valley of the Tees:—"The continued hard weather in Teesdale has demonstrated the fact that foxes are numerous beyond expectation. Within the limits of the Earl of Zetland's hunt great havoc has been made amongst poultry, and an evening or two ago no fewer than five turkeys were destroyed on the farm of Mr. James Byers, of East Shaws, near Barnard Castle. In open day foxes approach the farm-houses, commit depredations, and even retaliate upon intruders. In Lower Teesdale no fewer than sixteen hares were seen upon a patch of growing turnips cleared of snow by the wind, and the timid Cushat has made its way into the streets. Grouse have been starved off the moors, and many landowners who are game-preservers have shot hares rather than allow them to become poor in condition." A correspondent, some three or four miles west of this, writes:—"On Sunday, Feb. 7th, there were hundreds of Grouse in the fields here, and some of the hedges were swarming with them, feeding on the hawthorn buds."—T. H. NELSON (Bishop Auckland).

**Buzzard and Bittern near Oxford.**—A few days ago I saw a Common Buzzard, which had been killed in a trap on Feb. 5th at Horton, about six



miles from Oxford. It was a male bird, one of the dark type, and rather a large one, measuring 21 in. On Feb. 8th a Bittern (*Botaurus stellaris*) made its appearance at Merton, near Bicester, and of course was shot. It also proved to be a male, in good condition. Both are now being preserved by Mr. Darbey, 5, Market Street, who informs me it is a long time since he has had either species brought to him for preservation.—ARTHUR H. MACPHERSON (Trinity College, Oxford).

**Ivory Gull and Little Auk in Caithness.**—A mature specimen of the Ivory Gull was shot at Bishop's Castle, Thurso, on the 30th December last, by Mr. J. G. Millais, then on a visit to this county (Caithness). This gull is but a rare visitor to Britain, although I know of several specimens having been got in Orkney and Shetland. The first authenticated instance of the occurrence of the Ivory Gull in this county is recorded (Mem. Wern. Nat. Hist. Soc., vol. iv. p. 501) by Mr. Lawrence Edmondston, whose talented communications to various learned societies and scientific journals have rendered invaluable service in the way of illustrating the Ornithology of his native county. Mr. Edmondston's specimen was a bird of the second year, and was shot in Balta Sound in December, 1822. The late Mr. Strang, of Sanday, a gentleman who did for Orkney much the same as Mr. Edmondston did for Shetland, shot a specimen of the Ivory Gull in the Bay of Firth, Orkney, in 1832, and another shot in Orkney, November 27th, the same year, was exhibited at a meeting of the Zoological Society of London. I examined another shot at Kirkwall by the late Mr. Rankin, of that place, in 1849. Early in January I saw a fine lively specimen of the Little Auk, which had taken shelter inland a few hundred yards from our stormy bay during an easterly gale. This species is much more numerous in the Orkney Islands after a westerly gale than they appear to be here, and in the former county they can always find shelter in some of its numerous bays or on the lee side of an island, which they cannot do here.—W. READ (Wick).

[Of late years the Ivory Gull has been more often observed. Twenty-two instances of its occurrence are particularized in our 'Handbook of British Birds,' pp. 174, 175, of which four relate to Orkney, Shetland, and Caithness.—ED.]

**Hybrid Finches.**—As hybrids between Bullfinch and Goldfinch are probably of somewhat rare occurrence, it may be well to place on record the fact that two such hybrids, both cocks, bred from Goldfinch cock and Bullfinch hen, were in the possession of Mr. John Beach, of Little Horton Lane, Bradford, in 1858, and were exhibited by him at a Bird Show at the Crystal Palace in November of that year. Both birds were stated to be then four months old. A hybrid between Goldfinch and Greenfinch, aged about two years and six months, was exhibited by Mr. Hugh Hanley, of the

Life Guards; and, at the same show, Mr. E. T. Keys, of Beresford Street, Woolwich, exhibited a bird which he described as a cock hybrid between Skylark and Sparrow, but which was nothing more nor less than a Common Bunting (*Emberiza miliaria*), as I learnt from Mr. A. D. Bartlett, who saw all the above-mentioned specimens.—J. E. HARTING.

**New Colonies of the Black-headed Gull in Norfolk.**—When visiting Somerton Broad, in 1884, I saw a number of Black-headed Gulls in very immature plumage (some of them, indeed, only just able to fly), and was informed that a few pairs had established a new colony on the edge of this piece of water. It was then too late in the season to look for nests, but last summer another visit was paid in May, with the result that we found a colony firmly established. Twenty-one nests contained eggs, and about forty more were ready for eggs. The establishment of any new colony of this marsh-loving Gull is, I think, a matter of more than local interest. In 1883 Mr. F. Norgate found a colony at Langmere, near Thetford, consisting of forty or fifty nests. I saw no signs of them in the preceding year (1882), when at the same lake, and Mr. Norgate is informed they did not nest there in 1884, so very likely they only nested there one year, and have now gone back to the parent gullery at Scoulton, distant, as the crow flies, nine miles, where I learn from Mr. E. Newton, who has been there lately, that the Gulls are doing well. Mr. T. Southwell tells me that the Hoveton Broad colony has moved to Little Hoveton Broad, a distance of a mile and a half,—it is to be hoped not a premonitory symptom of their breaking up altogether in a locality where they have now been established thirty years. The small colony which existed at Barton Broad a few years ago (see ‘Catalogue of the Birds of Norfolk,’ p. 36), is extinct, and seems never to have consisted of more than a nest or two. The movements of Gull colonies are rather erratic: for a list of those existing up to 1884, see J. E. Harting, ‘The Field,’ Feb. 2nd and 16th, 1884, and H. Saunders, Yarrell’s ‘British Birds,’ 4th ed., pt. xxii. These writers justly consider that there are few marsh species which have suffered less than the Black-headed Gull.—J. H. GURNEY, jun. (Northrepps, Norwich).

**Changes of Plumage in the Kestrel.**—When does the male Kestrel assume its perfect adult plumage? I do not say “breeding plumage,” because probably it breeds before assuming the perfect adult plumage. From the series I have before me, it seems to me to take longer than has generally been allowed. Mr. Dresser says:—“The first signs of adolescence appear on the upper tail-coverts, which become bluish grey; and afterwards the tail gets gradually grey, the black bars by degrees disappearing, while the blue head is the last to be donned. We have seen a specimen shot in December which had the blue tail of the male, but preserved the rufous head of the female, while examples killed as late as May have slight

remains of black bars on the tail and a dash of rufous on the head." The question, of course, arises, are these last-mentioned examples in their first or second, or even in their third, May? From the series I have before me I am inclined to think they are at least in their second, and possibly in their third, May, and that the full adult plumage is not attained till after the autumn moult following. Professor Newton, in the 4th edition of Yarrell's 'British Birds,' says:—"Young males are like the female till after their first winter, but then begin to exhibit adult plumage, the head being the last part to change." In former editions of this work it is stated that "Young males are like the females till after their first winter, but begin by slow degrees of change in colour to exhibit the plumage which distinguishes the males after having completed their first year." Thus Yarrell would give the male Kestrel a year before beginning to exhibit the change of plumage. But he does not (neither do the others) tell us how long it takes to complete the adult plumage. No. 1, the youngest example in my series, was killed in January. There is no indication of blue on the head; there is, however, a very slight wash of blue just perceptible in some lights on the tail; and on the tail-coverts blue is the predominating colour, though the feathers are distinctly barred with dark brown. The feathers on the back and rest of the upper parts have broad patches of dark brown towards the tip; and also dark brown bars nearer the body. No. 2, a male killed in May, has a very slight indication of blue on the head; the dark streaks on the feathers of the head are, however, narrower than in No. 1. The feathers on the rump and tail-coverts are uniformly blue, having no dark markings except the narrow shaft-streak. The tail-feathers are very distinctly barred, but a decided wash of blue appears, especially near the base of the feathers. The feathers on the back and rest of the upper parts are more like those of the adult male, having only a small spot of dark brown towards the tip, but still the spots are larger and more frequent than in older birds; the wing-coverts, however, are barred also. No. 3 was killed in August, probably his second August. This bird has decided indications of blue on the back of the head; the new feathers on the rump and the tail-coverts are also blue. The feathers of the tail are barred, but not so broadly and distinctly as in Nos. 1 and 2, the bars towards the body becoming very indistinct, and there is a decided wash of blue especially towards the base of the feathers. On the upper parts the new feathers have only the dark spot towards the tip, some of the old feathers, however, showing the dark bars of the female. This bird had not completed its moult. No. 4, killed in March, has a nearly perfect blue head, with only slight indications of rufous appearing; rump blue; tail-coverts, though mostly blue, have still rather faint dark bars apparent. The tail-feathers are narrowly but distinctly barred and washed with blue towards the base; the outer web of the two outer tail-feathers are pale blue nearly throughout

their length ; the dark bars, however, are apparent. The feathers on the back and the rest of the upper parts have very slight black spots towards the tips, and no bars except on the wing-coverts. No. 5, from Guernsey (unfortunately not dated), is in nearly perfect adult plumage, a very slight tinge of rufous on the head, the only other indication of its not being fully adult being traces of dark bars on the inner webs of the tail-feathers, except the two central ones ; these are, however, very distinct, though not reaching across the web. Although not dated, this bird was probably shot in December or January, for Mrs. Petherick, the local taxidermist, had one brought into her shop during the last week of December in nearly identical plumage. No. 6, killed in January, is in nearly perfect adult plumage, a very slight tinge of rufous on the head, very slight spots—they can scarcely be called bars—of black on the inner webs of the outer tail-feathers, only near the foot of the feather. This bird may, of course, be of the same year as No. 5, the dark bars gradually disappearing as the breeding-season draws on. On the upper parts the dark marks are entirely confined to the triangular spots near the tips of the feathers ; there are no dark bars even on the wing-coverts. My other skins are No. 7, an undoubted adult female from Guernsey, not dated. No. 8, a female, killed in December, shows some traces of blue on the rump and tail-coverts ; with this exception the appearance of the upper parts is decidedly that of the female, the dark markings being much broader and more regular than in the youngest male of the series. The last of my series of skins, No. 9, killed in Guernsey, but not dated, seems rather an exceptional bird, almost amounting to a variety ; it is pale all over, and particularly pale and mealy on the rump and tail-coverts ; the tail-feathers also are pale, though slightly tinged with blue towards the body ; the dark bars on the two central tail-feathers are little more than spots, not reaching either to the shaft or to the outside edge of the feather. I should call this a young male in its first January, though for some reason the blue has not been developed on the rump and tail-coverts, which are of a pale whity-brown. Taking this series throughout (the dates where given I know to be correct), it would seem that No. 1, killed in January, was in its first January, and had completed its first moult, there being no old or worn feathers about it. No. 2, killed in May, would be in its first May, that is to say nearly, if not quite, a year old. No. 3, killed in August, would be in its second August, and consequently rather more than a year old. No. 4, killed in March, would be in its second March, and therefore within two months a year older than No. 2. There is a gap between Nos. 4 and 5, especially as to the tail, but No. 5, having gone through the autumn moult, might account for this, otherwise there would be another year to account for ; anyhow, it could not be younger than its third August. No. 6 would be a month older again. It seems to me that all these gradual changes in plumage cannot be accounted



for in one or even two years, and that, giving credit for considerable advance towards maturity by change of colour between the moults, the male Kestrel would be more than three years old before attaining its fully adult plumage. This, I think, is a considerably longer period than has generally been supposed, and, as my series is not complete, the gap between Nos. 4 and 5 may represent another year.—CECIL SMITH (Bishops Lydeard, Taunton).

**The Australian Lyre-bird.**—Having been stationed at intervals for some years on the mountains of Eastern Manaro, in the southern part of New South Wales, the habitat of the Lyre-bird or Native Pheasant (*Menura superba* or *paradisea*), I have thought some fuller particulars regarding its habits than are usually obtainable might be interesting to your readers. This range of mountains, the more sheltered sides of which form the home of those interesting birds, attains a height of over 4000 feet above sea-level. The sides, sloping towards the coast at a general angle of about  $45^{\circ}$ , are heavily timbered with eucalypti, wattle, and musk trees, and covered with a dense undergrowth of ferns and creepers, the gullies being filled with tree-ferns. Generally speaking, there is a noticeable absence of game, but at certain seasons the forest resounds with the varied cries of the male Lyre-bird. The hen builds her nest at the foot of a trunk of a tree, of twigs and bark, lining it with dried ferns and grass, and leaving an opening in the front of the top. Herein she deposits the *one* egg on which she sits (for, as an Irish friend said, "she only lays one egg at a time"), leaving the nest daily for food. The country here abounds in the hills of ants, from those of the large bull-dog ant, an inch long, to those of a small black variety, and it is upon these insects and their larvæ that the Lyre-bird chiefly subsists. The bird is of a sooty black colour, with a body somewhat larger than that of a pigeon, but has a tail of graceful form and beautifully marked. Ordinarily, this tail is simply carried behind like a peacock's in repose, but if found upon their "dancing beds," with head erect and tail expanded over the back, they are decidedly handsome. These "dancing beds" are patches of comparatively clear ground, from one to two yards in diameter, with the ferns trodden smoothly upon the surface, upon which the birds assemble, and dance and strut to their apparent great delight. The original cry or call of the Lyre-bird is a very simple one, but his adopted one partakes of that of every sound he hears; for he is a most wonderful imitator, not only of other birds, such as the parrot, cockatoo, yang-yang, or magpie, but he will imitate to the life the bullock-driver with his whip, the step of the teamster's horses, the rasping of the cross-cut saw, and the blows of the axe and tomahawk; and, more wonderful still, more than one of these at the same time, so that the solitary explorer is led to believe he has suddenly come upon pioneers of civilisation in the heart of the forest. The male bird is exceedingly pugnacious, and this fact is made use of by the settlers to his destruction, for his tail is worth three dollars.

By imitating one of his prominent calls the hunter can lure him within gun-shot, although naturally very shy; he comes to repel a fancied intruder into his domain. His flesh is very dark-coloured and coarse, and only used as food in cases of necessity. Many attempts have been made to rear the birds in captivity, and there is a report that *one* has been successful. With this exception, which I cannot authenticate, I never heard of any result but failure. The sound of his call so alters in proportion as his tail is in full feather or indifferently ornamented, that hunters can judge from that whether or no any individual bird is worth pursuit. My apology for asking for so much of your valuable space must be in the fact that, until I set myself the task of getting the above information I could not obtain it from published accounts. — ALFRED MORRIS (Railway Survey Camp, Manaro, New South Wales), in 'Nature.'

#### FISHES.

**Porbeagle Shark at Plymouth.**—On the 26th January last I examined a fine male Porbeagle Shark, *Squalus cornubicus*, eight feet in length, which had been taken in a herring-net off Plymouth. Its eyes were large, and almost round, the irides dark, with a small oblong spot of emerald, or bright pea-green, in the centre of the pupils. This species is far less frequently captured by the Plymouth fishermen than the Blue Shark, *Squalus glaucus*, which has been rather plentiful on the coasts of Devon and Cornwall during the last few years.—J. GATCOMBE (Durnford Street, Stonehouse).

#### MOLLUSCA.

**The resting position of Oysters.**—I observe in the last number of 'The Zoologist' (p. 79) that Mr. J. T. Cunningham has revived the question as to the natural position of the Oyster in its bed. He is right in his opinion that these bivalves *usually* lie with the left, or convex, valve *uppermost*. Prof. Huxley and other authorities are also correct in the statement that the shell is *invariably attached* by the convex valve. The discrepancy is explained by the fact that most Oysters in their first or second year become detached from the substance to which they fastened themselves in their infancy. This is effected either by the "cultick-knife" of the dredger, who makes it his business to separate the young brood from the stone or shell to which it is found adhering; or, more frequently, by natural means, as, the "spat" being generally deposited in clusters, the individual Oysters grow against each other, and the shells are thus forced upwards from the surface of attachment and ultimately broken off. To facilitate this operation the tiles used in artificial breeding-grounds for the collection of the spat are coated with a friable cement. If the free Oyster falls on the convex shell it soon becomes turned over by the motion of the water, and then remains

lying on its flat valve, in which position (often with the umbo buried in the soft soil) it is comparatively free from disturbance by the action of the restless sea. Another advantage resulting from this position may be that particles of sand or mud which would be retained in the concavity of the rounded shell, to the injury of the delicate mantle and branchiæ, are readily swept away from the flat surface of the right valve. Larval Oysters often become attached singly to fragments of shell or very small stones. When these Oysters have grown somewhat larger than the substance to which they are fastened they are practically free, and become turned over as soon as the left valve has assumed sufficient convexity. When an Oyster is attached to a stone sufficiently heavy to moor it in its bed in its normal position, and is thus allowed to grow to maturity, the flat upper valve will be found covered with the rich growth of zoophytes, sponges, and algæ which Mr. Cunningham rightly says are ordinarily found only on the convex valves of Oysters brought up by the dredge. I have an illustration of this in a beautiful specimen now in my aquarium.—SIBERT SAUNDERS (Whitstable).

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## SCIENTIFIC SOCIETIES.

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### LINNEAN SOCIETY OF LONDON.

January 25, 1886.—WILLIAM CARRUTHERS, F.R.S., Vice-President, in the chair.

Dr. T. Spencer Cobbold read a paper “On *Strongylus Azei* and its affinities. This diminutive maw-worm, obtained from the stomach of a donkey, possesses interest, inasmuch as its structural characters closely correspond with those of the Entozoon (*Strongylus Douglasii*, Cobb.), infesting the proventriculus of the ostrich. It also shows affinity with the grouse strongyle (*S. pergracilis*), and with the stomach-worm (*S. contortus*) of lambs; while its peculiarities throw light upon other questions of morphology, especially its relations to the singular maw-worm (*Simondsia paradoxa*, Cobb.) of the hog.

February 4, 1886.—Sir JOHN LUBBOCK, Bart., F.R.S., M.P., President, in the chair.

Mr. James Dallas exhibited a specimen of the Glossy Ibis, *Ibis falcinellus*, Linn., which was purchased last spring from Mr. James H. Clyde of Bradworthy Vicarage, near Holsworthy, Devon, in whose possession, or that of his family, it had been from the time it was killed in the neighbourhood. It is mentioned by Morris, in his ‘British Birds’ (vol. iv. p. 172), as follows:—“In the ‘Western Times’ of October 11th, 1851, it was

recorded that a specimen of this rare visitor was shot at Holsworthy, in North Devon, on the 7th September." This specimen is now in the Albert Memorial Museum, Exeter. Another in the same collection, in which the beak is more curved, is said to have been shot at South Molton in October, 1851, and was presented to the Museum by Mr. William Toms.

Mr. Clarence Bartlett exhibited a remarkable specimen of caterpillar, about seven inches long, of a steel-grey colour, hairy and spiny, which he believed to have been brought from Africa. [Figured in 'The Field,' Feb. 20.]

Mr. A. Hammond drew attention to a microscopic section of the integument of the larva of a dipterous insect, *Stratiomys chameleon*, raising the question as to whether the polyzonal areas described by M. Viallanes on the external surface of the cuticle were cellular in their nature, as Mr. Hammond suggested, or mere surface markings.

A paper was read by Mr. E. C. Bousfield, "On the annelids *Slavina* and *Ophidonais*. In this communication he comments on Vejdovsky's new genus *Slavina*, and objects to his identification of *Nais appendiculata* with *Nais lurida*, giving a full description of the latter, and observing the points of contrast. He also describes touch-organs in *Ophidonais* as similar to those in *Slavina*, and mentions other points of similarity between the two, proposing to abolish the latter genus, placing its only species in *Slavina*. A diagnosis of this species is given with appropriate illustrations.

Prof. R. J. Anderson read a paper on the relative lengths of the segments of limbs in the Chick during development, from a series of measurements made between the sixth and twentieth days. On, or even before, the ninth day the bones of the forearm and manus are longer than the corresponding bones of the lower leg and foot. Afterwards the tarso-metatarsus begins to lengthen and attains a greater relative size at the end of incubation.

February 18, 1886.—Prof. ST. GEORGE MIVART, F.R.S., in the chair.

Prof. H. Macaulay Posnett, of Auckland, New Zealand, was elected a Fellow of the Society.

Mr. A. D. Michael read a paper "On two new *Acari* of the genus *Glyciphagus* discovered in Moles' Nests, viz. *G. platygaster* and *G. dispar*." These curious creatures are characterised by a large flat abdomen, bordered by singular rough projections and large spines. The most remarkable point concerning them is that in one species, *G. platygaster*, the male, although somewhat different from the female, is not more so than is usual in the genus, and would be known directly as the male of the same species; while in the other species, *G. dispar*, the female of which closely resembles that of *G. platygaster*, the male is totally unlike both its own female and the male of *G. platygaster*. The size, form, and arrangement of the legs are



quite dissimilar, and the projections and spines absent. *G. dispar* is also interesting as affording proof of the retro-anal position of the bursa copulatrix, and of its being the posterior median projection characteristic of the female of the genus. The bursa communicates by a long, fine sperm-duct with a large receptaculum seminalis, and this again by two short, wide ducts with the ovaries and long contorted oviducts. The articulation of the hind tarsi in the male of *G. platygaster* is modified to give greater play to the joint for clasping purposes. Mr. Michael speculates upon the cause of the similarity of the sexes in the one species, and their great dissimilarity in the other, both being found together, and apparently under the same conditions. The following specimens were shown under the microscope in illustration of the communication, viz. *G. platygaster*, male and female, and *G. dispar*, male and female, *in coitu*.—J. MURIE.

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## ZOOLOGICAL SOCIETY OF LONDON.

January 19, 1885.—Prof. W. H. FLOWER, LL.D., V.-P.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of December, and called attention to a male Cheetah, *Cynælurus jubatus*, presented to the Society by Nawab Mirza Hassim Ali Khan, of the Afghan Frontier Survey; to a female Tiger and four Persian Gazelles, deposited by Dr. J. E. T. Aitchison, Naturalist to the Afghan Boundary Commission; and to two curious hybrid Ducks, *Tadorna rutila*, and the Egyptian Goose, *Chenalopex aegyptiaca*, presented by Sir Joseph Fayrer.

A letter was read from Dr. C. S. Minot, of 25, Mount Vernon Street, Boston, Mass., U.S.A., calling attention to the Elizabeth-Thompson Science Fund for the advancement and prosecution of scientific research, and inviting applications for assistance from it.

A communication was read from the Rev. T. R. R. Stebbing, containing descriptions of some new Amphipodous Crustacea from Singapore and New Zealand.

Mr. Howard Saunders exhibited an adult specimen of the Sooty Tern, *Sterna fuliginosa*, caught alive near Bath, October, 1885, and pointed out that only two examples of this species had as yet occurred in Great Britain.

Mr. H. J. Elwes read a paper on the Butterflies of the genus *Parnassius*, having special relation to the development, functions, and structure of the horny pouch found in the females of this genus. He described the habits, distribution, and variations of twenty-three species which he recognised in the genus; and illustrated his remarks by the exhibition of a very complete collection of specimens of drawings. The paper was supplemented by Prof. Howes's remarks on his examination of the anatomy of the *Parnassius*

*apollo*, and by Mr. Thomson's notes on the habits of the insects as bred in the Society's Gardens in 1885.

Mr. Oldfield Thomas read a paper containing a list of the specimens of Mammals collected in various parts of India, and presented to the British Museum by Mr. A. O. Hume. The series consisted of 400 specimens, nearly all in excellent condition, and with accurate localities attached to them. A new Mouse from Tenasserim was proposed to be called *Mus Humii*. A new Flying Squirrel from the Malay Peninsula was named *Sciuropterus Davisoni*.

A communication was read from the Rev. Canon Tristram, containing the description of an apparently new species of Duck (*Dafila*) from Sydney Island of the Phœnix group in the Central Pacific, which he proposed to name, from its extreme simplicity of plumage, *Dafila modesta*.

A communication was read from Mr. A. G. Butler, containing a description of the larva, pupa, and imago of a Butterfly, *Aporia hippia*, from specimens bred in the Society's Gardens.

February 2, 1886.—Prof. W. H. FLOWER, LL.D., V.-P.R.S., President, in the chair.

Mr. W. B. Tegetmeier exhibited and made remarks on a Pheasant from the Persian borders of Transcaucasia.

Mr. C. A. Wright exhibited a Dove of the genus *Turtur* from Malta, and identified it as a semi-albino variety of *Turtus auritus*.

Mr. Selater exhibited, on behalf of Mr. W. H. Dobie, a young specimen of Sabine's Gull, *Xema Sabinii*, which had been obtained at Mostyn, on the coast of Flintshire.

Mr. Seebohm exhibited a specimen of Ross's Gull, *Larus Rossi*, obtained in June last in the neighbourhood of Christianhaab, Disco Bay, Greenland.

Capt. R. G. Wardlaw Ramsay exhibited and remarked on a specimen of a new bird of the genus *Copsychus* obtained by Mr. H. Pryer in North-Eastern Borneo, which he proposed to call *C. niger*.

A communication was read from Prof. R. Collett, containing an account of the external characters of the Northern Fin-Whale, *Balenoptera borealis*, based upon the examination of numerous specimens of this whale killed on the coast of Norway during the past summer.

A communication was read from Dr. G. Stewardson Brady, containing descriptions of some new fresh-water Entomostracous Crustacea from South Australia.

Dr. H. Woodward communicated, on behalf of Dr. Monticelli, a catalogue of the species of Bats found in South Italy.

Mr. R. B. Sharpe read the first of a series of notes on birds in the Hume Collection. The present communication treated of the specimens supposed to belong to the Hawfinch of Europe, which had been collected at Attock,

and showed that they belong to a different species, which Mr. Sharpe proposed to call *Coccothraustes Humii*.

Mr. F. E. Beddard read the third of his series of notes on the Isopoda collected during the voyage of H.M.S. 'Challenger.' The present paper completed the preliminary description of the new species of this group collected during the voyage, which amounted altogether to about forty-five in number.

Mr. J. H. Leech exhibited and described specimens of a Butterfly from Mogador, which he referred to a variety of *Anthocharis eupheno*.

February 16, 1886.—Dr. ST. GEORGE MIVART, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of January, and called attention to a many-marked Snake, *Rhagerrhis multimaculata*, presented by the Rev. G. H. R. Fisk, and received January 1st, 1886; also to the birth of eight Tree Snakes, in the Society's Reptile House, on the 9th January. The mother, a fine example of *Dryophis prasina*, presented by Dr. F. H. Bauer, of Buitenzorg, Java, was received on the 15th August last, so that she must have been for upwards of five months without any possibility of intercourse with a male of the same species.

Mr. Sclater exhibited a specimen of the new Paradise Bird, *Paradisornis Rudolphi*, of Finsch and Meyer, lately discovered by Mr. Hunstein in the Owen Stanley Mountains of New Guinea, and pointed out the characters in which it differs from typical *Paradisaea*.

The Secretary exhibited, on behalf of Mr. L. Taczanowski, the skin of an Owl from the south-east of the Ussuri country, on the frontiers of Corea, which appeared to be referable to *Bubo Blakistoni* of Seeböhm.

Mr. E. Gerrard, jun., exhibited heads and skulls of two African Rhinoceroses, *R. bicornis* and *R. sinus*, obtained by Mr. Selous in Mashuna-land.

Prof. Ray Lancaster exhibited and made remarks on a drawing of a restoration of *Archæopteryx*.

Mr. Oldfield Thomas gave an account of a striking instance of cranial variation due to age, as shown in two specimens of the skull of the Canadian Marten, *Mustela Pennanti*, which presented extreme differences in the breadth of the zygomata, in the contraction of the interorbital space, and in the development of the occipital crest. Special stress was laid on the fact that such changes as these take place after the animal has attained maturity.

Mr. W. L. Sclater exhibited and described a new Madreporian Coral, which he proposed to call *Stephanotrochus Mosleyanus*. The coral had been dredged in the Faroe Channel during the cruise of H.M.S. 'Triton' in the summer of 1882. Some account of its anatomy and histology was also given.—P. P. SCLATER, *Secretary*.

## ENTOMOLOGICAL SOCIETY OF LONDON.

February 3.—ROBERT M'LACHLAN, F.R.S., President, in the chair.

The President nominated Mr. F. Du Cane Godman, F.R.S., Mr. H. T. Stainton, F.R.S., and Mr. J. Jenner Weir, F.L.S., Vice-Presidents for the ensuing year.

Dr. Livett, Lieut. Goodrich, Messrs. Eustace Bankes, and F. Enock, were elected Fellows; and M. Ragonot, of Paris, ex-President of the Entomological Society of France, was elected a Foreign Member of the Society.

Mr. C. O. Waterhouse exhibited some scales of *Coccidæ* (*Eriopeltis*), some of which were found by Mr. F. Moore on blades of grass at Ilfracombe; and others were found by Mr. Waterhouse on blades of grass in the Warren at Folkestone. Mr. E. A. Fitch remarked that *Eriopeltis festucae* had been recorded as British at a meeting of the Society held about thirty years ago.

Mr. Douglas sent for exhibition leaves of *Euonymus japonicus*, received from M. Lichtenstein, infested by *Chionaspis euonymi*, which occurred in great numbers at Montpellier and Nismes, and always destroyed the shrubs attacked by it.

The President exhibited specimens of *Tettix australis* (Walker), received from Mr. Oliff, of the Sydney Museum, who had captured them at the River Nepean, New South Wales. Mr. Oliff stated that the insect was decidedly subaquatic; he had found the insects not only on the surface of pools of water, but also eight or ten inches below the surface on the stems of water plants.

Mr. W. F. Kirby exhibited, on behalf of Mr. Ralfe, several specimens of *Lycana corydon* of a very extraordinary character; and Mr. Weir and others made remarks on them.

The Rev. W. W. Fowler exhibited a specimen of the almost unique beetle, *Harpalus calceatus*, taken by himself at Bridlington, Yorkshire; also a specimen of *Apion Lemoroi* (Brisout), a new French *Apion* taken on the coasts of Normandy and Brittany. He also exhibited several species of British *Helophori*, and read notes on their synonymy.

Mr. H. Goss read an analysis of M. Brongniart's recent work on 'Les Insectes Fossiles des Terrains Primaires' (Rouen, 1885), and expounded that author's views on the classification of insects from geological data.

The Rev. W. W. Fowler read notes on "A small collection of *Languriidæ*, with descriptions of two new species."

Dr. Baly communicated a paper entitled, "Descriptions of new genera and species of *Galerucidæ*."

Mr. J. Edwards communicated the first part of a synopsis of British *Homoptera-Cicadina*.—H. Goss.

